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Abstract

Locomotion in Virtual reality is the process where an avatar moves between 2 points inside a virtual environment. Brain computer interfaces have been studied in the past and some decoding techniques have been used to achieve locomotion on virtual and real environments. However, current techniques have challenges like limited control actions, long training times, and user's discomfort, that make the technique difficult to use. With this work, the decoding locomotion intention inside VR environments is explored. A combination of conditions where virtual reality scenarios, input controls and locomotion schemes, are used to analyze encephalography information related to locomotion. It is possible to achieve high classification accuracies between locomotion and resting state when power spectral densities information from beta and alpha bands and support vector classifier are used. However, classification accuracies decreased when move and turn were considered.